

CLAIMS

1. An illumination system consisting of phosphore
5 particles dispersed in a solid, durable matrix while
enabling it to be handled by a user.

2. The illumination system as claimed in claim 1,
characterized in that the particles are phosphores
10 within the visible region.

3. The illumination system as claimed in claim 1 or
2, characterized in that the particles can be excited
15 by electromagnetic radiation in the UV, visible, IR
region or by X-rays or by gamma rays, or by a beam of
particles (electrons, ions) or by an electric field.

4. The illumination system as claimed in one of the
preceding claims, characterized in that the matrix is
20 inorganic.

5. The illumination system as claimed in claim 4,
characterized in that the matrix comprises lithium
25 silicate.

6. The illumination system as claimed in claim 4,
characterized in that the matrix comprises a product of
the polymerization/polycondensation of a silicon
alkoxide.

30 7. The illumination system as claimed in one of the
preceding claims, characterized in that the matrix is
in the form of a thin layer adhering to a substrate.

35 8. The illumination system as claimed in one of the
preceding claims, characterized in that the phosphore
particles are in aqueous suspensions and characterized
in that their size is at most equal to 100 nm,

preferably 30 nm, preferably 10 nm, and in that the assembly that they form with the matrix is transparent.

9. The illumination system as claimed in one of
5 claims 1 to 7, characterized in that the size of the phosphore particles lies between 0.5 and 10 μm .

10. The illumination system as claimed in claim 9,
characterized in that the matrix comprises particles
10 scattering visible light.

11. The illumination system as claimed in one of
claims 7 to 10, characterized in that the substrate is
capable of exciting phosphore particles, in particular
15 an electroconductor, in particular of the UV
electroluminescent type.

12. The illumination system as claimed in one of
claims 7 to 10, characterized in that the substrate is
20 capable of emitting radiation with a wavelength in the
visible region under suitable excitation.

13. The illumination system as claimed in claim 12,
characterized in that the substrate is made of glass
25 with a cerium content capable of emitting blue light
under ultraviolet radiation.

14. The illumination system as claimed in claim 7,
characterized in that the substrate is made of glass,
30 in particular in the form of a sheet, slab, tube, fiber
or fabric.

15. The illumination system as claimed in claim 7,
characterized in that the substrate is made of plastic.
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16. The illumination system as claimed in one of the
preceding claims, characterized in that the phosphore
particles emitting different wavelengths are associated

there with, separated from each other and homogenized, so as to produce light, especially white light.

17. The illumination system as claimed in one of
5 claims 1 to 15, characterized in that the phosphore
particles that are identical or emit different
wavelengths are associated therewith in variable
compositions and/or concentrations, so as to form signs
such as written or similar signs, or for any other,
10 especially decorative, purpose.

18. The application of an illumination system as
claimed in one of the preceding claims to a transparent
device.

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19. The application of an illumination system as
claimed in one of claims 1 to 17 to a light-scattering
device.

20 20 The application as claimed in claim 18 or 19 to a
lamp, in particular a thin one, or to a device
illuminating at night, in particular for signs, or for
decorative purposes, or to a flat lamp.

25 21. The application as claimed in one of claims 18 to
20, to monolithic, laminated, single glazing or
multiple glazing designed for buildings, to a transport
vehicle, such as an automobile rear window, side window
or roof, to any other terrestrial or aquatic vehicle or
30 aircraft, to street furniture, such as a bus shelter,
to a road sign or to an advertisement panel, to an
aquarium, to a store window, to a glasshouse, to
interior furniture, to a mirror, to a screen for a
display system of the computer type, to a television,
35 to a telephone, to electrically controllable glazing
such as electrochromic glass, to liquid crystals, to
electroluminescent material or to photovoltaic glass.